

Appn. No. 10/423,128  
Amendment dated August 20, 2007  
Reply to Office Action mailed May 16, 2007

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims** (deleted text being struck through and added text being underlined):

1. (Currently Amended) An apparatus for detecting and indicating faults on a computer motherboard comprising:

a nonvolatile memory device for storing a plurality of diagnostic instructions for detecting faults on said computer motherboard; and

a microprocessor, coupled to said nonvolatile memory device, for, responsive to receiving an initialization signal, requesting and retrieving said plurality of diagnostic instructions, and executing the diagnostic instructions so as to detect faults on said computer motherboard; and

a visual indicator coupled to and controlled by said microprocessor indicating for providing a visual indication when a fault on said computer motherboard is detected during execution of said diagnostic instructions by the microprocessor;

wherein said microprocessor is configured by said plurality of diagnostic instructions to:

first turn on a visual indicator when power is applied to said computer motherboard;

execute a first portion of said plurality of diagnostic instructions so as to detect faults on said computer motherboard;

second turn off said visual indicator when no faults on said computer motherboard are detected during execution of said diagnostic instructions.

2. through 3. (Cancelled)

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4. (Previously presented) The apparatus for detecting and indicating faults on a computer motherboard as in claim 1, further comprising a flash circuit for flashing said visual indicator upon detection of a fault on a memory subsystem.

5. (Original) The apparatus for detecting and indicating faults on a computer motherboard as in claim 1, wherein said nonvolatile memory device stores power-on self-test diagnostic instructions and basic input and output system instructions.

6. (Original) The apparatus for detecting and indicating faults on a computer motherboard as in claim 1 wherein said visual indicator is a light emitting diode.

7. (Original) The apparatus for detecting and indicating faults on a computer motherboard as in claim 1 wherein said visual indicator is an external visual indicator.

8. (Original) The apparatus for detecting and indicating faults on a computer motherboard as in claim 1 wherein said visual indicator is an internal visual indicator.

9. (Original) The apparatus for detecting and indicating faults on a computer motherboard as in claim 7, further comprising an I/O port coupled to said microprocessor, said microprocessor providing signals to said external visual indicator via said I/O port.

10. (Original) The apparatus for detecting and indicating faults on a computer motherboard as in claim 1, wherein said computer motherboard includes integrated circuits mounted on said computer motherboard.

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11. (Currently Amended) A method for detecting and indicating that there are no faults on a computer motherboard comprising the steps of:  
storing in a nonvolatile memory device a plurality of diagnostic instructions for detecting faults on said computer motherboard;  
receiving an initialization signal to start a computer system;  
turning on a visual indicator when power is applied to said computer motherboard;  
requesting and retrieving said diagnostic instructions, and first executing a first portion of said diagnostic instructions so as to detect faults on said computer motherboard, responsive to reception of said initialization signal; and  
turning off said visual indicator when no faults on said computer motherboard are detected during execution of said diagnostic instructions;  
initializing a memory subsystem;  
second executing a second portion of said diagnostic instructions so as to detect faults in said memory subsystem; and  
flashing said visual indicator when a fault is found on said memory subsystem.

12. (Cancelled)

13. (Original) The method for detecting and indicating faults on a computer motherboard as in claim 11, wherein said nonvolatile memory device stores power-on self-test diagnostic instructions and basic input and output system instructions.

14. (Original) The method for detecting and indicating faults on a computer motherboard as in claim 11, wherein said visual indicator is a light emitting diode.

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15. (Original) The method for detecting and indicating faults on a computer motherboard as in claim 11, wherein said visual indicator is an external visual indicator.

16. (Original) The method for detecting and indicating faults on a computer motherboard as in claim 11, wherein said visual indicator is an internal visual indicator.

17. (Original) The method for detecting and indicating faults on a computer motherboard as in claim 15, further comprising the step of initiating an I/O port coupled to said microprocessor, said microprocessor providing signals to said external visual indicator via said I/O port when said computer motherboard is not initialized successfully.

18. (Currently Amended) The method for detecting and indicating faults on a computer motherboard as in claim 11, wherein said computer motherboard includes integrated circuits mounted on said computer motherboard and excludes said memory subsystem.

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19. (Previously presented) An apparatus for detecting and indicating that there are no faults in a computer motherboard comprising:

means for receiving an initialization signal to start a computer system;

means for turning on a visual indicator when power is applied to said computer motherboard;

means for storing a plurality of diagnostic instructions for detecting faults on said computer motherboard;

means for, responsive to reception of said initialization signal, requesting and retrieving said plurality of diagnostic instructions and executing said diagnostic instructions so as to detect faults on said computer motherboard; and

means for turning off said visual indicator when no fault is found on said computer motherboard during execution of said diagnostic instructions.

20. (Previously presented) The apparatus for detecting and indicating faults on a computer motherboard as in claim 19, further comprising:

means for initializing a memory subsystem; and

means for flashing said indicator when a fault is found in said memory subsystem.

21. (Original) The apparatus for detecting and indicating faults on a computer motherboard as in claim 19, wherein said visual indicator is an external visual indicator.

22. (Original) The apparatus for detecting and indicating faults on a computer motherboard as in claim 19, wherein said visual indicator is an internal visual indicator.

23. (Original) The apparatus for detecting and indicating faults on a computer motherboard as in claim 19, wherein said storing diagnostics means includes means for storing power-on self-test diagnostic instructions and basic input and output system instructions.

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24. (Original) The apparatus for detecting and indicating faults on a computer motherboard as in claim 19, wherein said visual indicator is a light emitting diode.

25. (Original) The apparatus for detecting and indicating faults on a computer motherboard as in claim 21, further comprising means for providing a signal to said visual indicator via an I/O port.

26. (Previously presented) An apparatus for detecting and indicating faults on a computer motherboard and in a memory subsystem of a computer system comprising:

an external visual indicator;  
a general I/O port coupled to said visual indicator;  
a flash circuit coupled to said visual indicator for flashing said visual indicator;  
a host bus for transmitting address and data signals;  
a nonvolatile memory device coupled to said host bus storing a plurality of diagnostic instructions stored, said a-plurality of diagnostic instructions including power-on self-test diagnostic instructions for detecting faults in said computer motherboard and in a memory subsystem;  
a microprocessor coupled to said host bus, to said general I/O port, and to said flash circuit, said microprocessor turning said visual indicator on through said general I/O port and requesting and retrieving said plurality of diagnostic instructions upon reception of an initialization signal to start said computer system, executing said diagnostic instructions for detecting faults in said computer motherboard prior to executing said diagnostic instructions for detecting faults in said memory subsystem, turning said visual indicator off if no faults are detected in said computer motherboard, and activating said flash circuit if faults are detected in said memory subsystem.

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27. (Previously presented) The apparatus for detecting and indicating faults on a computer motherboard and in a memory subsystem of a computer system as in claim 26, wherein said external visual indicator is located on a panel of said computer system.

28. (Previously presented) The apparatus for detecting and indicating faults on a computer motherboard and in a memory subsystem of a computer system as in claim 26, wherein said computer motherboard comprises an integrated circuit mounted on said computer motherboard.

29. (New) The method for detecting and indicating faults on a computer motherboard as in claim 11, wherein said visual indicator remains turned on when faults are detected on said computer motherboard.

30. (New) The method for detecting and indicating faults on a computer motherboard as in claim 11, wherein said visual indicator remains turned on at least until said first portion of said diagnostic instructions are executed, and remains turned on if faults are detected on said computer motherboard.

31 (New) The apparatus for detecting and indicating faults on a computer motherboard as in claim 1, wherein said microprocessor is further configured by said plurality of diagnostic instructions to:

initialize a memory subsystem;  
execute a second portion of said diagnostic instructions so as to detect faults in said memory subsystem; and  
flash said visual indicator when a fault is found on said memory subsystem.